V. PLANNING PERIOD PROJECTIONS AND STRATEGIES

A. PLANNING PERIOD

The planning period for the Plan Update is January 1, 2009 - December 31, 2023.

B. POPULATION PROJECTIONS

The District's population projections are presented in Table 5-1. The population estimate from Section 4 for the 2005 reference year is 40,790. The villages of Loudonville and Baltic are subtracted from the District's total population because more than 50% of these communities' residents live outside the District.

United States census statistics indicates that between 1996 and 2000 the Baltic Village portion in Holmes County grew from 98 to 101, a .52 percent increase per year. The Loudonville Village rose from 71 to 85, a 3.94 percent increase per year. These same percentages will be used to extrapolate projections for the Plan Period.

The District anticipates population will continue to grow steadily over the fifteen-year planning period. The population projection for future years uses growth rates provided by the Ohio Department of Development, Office of Statistical Research. The District is projected to have a total population of 46,526 by 2023.

C. WASTE GENERATION PROJECTIONS

1. Residential/Commercial Sector

The District's residential/commercial waste generation projections are presented in Table 5-2. Waste generation is presented for the 2005 reference year and each subsequent year through 2023. The District adjusts the per capita generation rates to coincide with the per capita rate projection in Table 4-8.

The total amount of residential/commercial waste generated in 2005 was 40,871 tons, which resulted in a per capital generation rate of 5.51. The actual total amount of waste generated in 2006 and 2007 resulted in generation rates of 4.73 and 5.15 respectively. Past data shows that the generation rates in 2003 and 2004 were 4.48. The table below depicts the actual historical waste generation rates from 2003 to 2007.

Year	Generation Rate
2003	4.48
2004	5.15
2005	5.49
2006	4.73
2007	5.15

Of these five years, the reference year (2005) is the highest at a per capita generation rate of 5.49 tons per person. If the average generation rate is taken for the years 2003, 2004, 2006 and 2007, the result is 4.88 tons per person. National trends indicate that the per

capita waste generation in 2008 was 4.82 tons per person. Therefore, a generation rate of 4.88 tons per person is a more realistic generation rate for the District to use for 2008. The per capita generation rates are adjusted throughout the planning period by increasing the generation rate by 0.5% in accordance with Ohio EPA recommendations issued on September 4, 2002 in the guide titled: "Estimating Per Capita Residential/Commercial Waste Generation". Beginning in 2009, the first year of the planning period, residential/commercial waste is projected to be 38,201 tons. This is expected to increase to 44,655 tons by 2023.

2. Industrial Sector

The District's industrial waste generation projections are presented in Table 5-3. Industrial waste generation is presented by the Standard Industrial Classification (SIC) code for the 2005 reference year and each year of the planning period through 2023. A description of each SIC code is presented in Table 5-3A.

Industrial waste generation is projected for SIC codes 20, and 22-39. The results of the industrial waste generation survey is presented in Table 4-2, however, the adjusted industrial waste generation figure in Table 4-8 is used for future projections. The District projects industrial waste will increase 0.44% each year throughout the planning period. The figure 0.44% is based upon the tables developed by the Ohio Department of Job and Family Services. It is entitled "Job Outlook to 2014" for East Central Ohio Economic Development Region 10. The assumptions are (1) that the economic climate for this region will not change significantly from 2004 to 2014, and (2) the nondurable goods manufacturing percentage of change provides our District with a more than adequate growth of employees. The 2006 Industrial Survey conducted for 2005 shows a slight increase in employment since the 1997 survey. This is based upon the fact that industrial employment is increasing slower than the service sector. Employment projections in the industrial sector will increase at a rate of 0.44% per year. The District projects industrial waste will increase from 126,626 tons in the reference year to 137,039 tons in 2023, the final year of the planning period.

The District did not classify materials from train boxcars, metals from demolition activities and ferrous metals resulting from salvage operations conducted by licensed motor vehicle salvage dealers.

3. Total Waste Generation

Total waste generation projections for the District during the planning period are presented in Table 5-4. The total waste generation for the 2005 reference year is 196,528 tons. This includes residential/commercial waste (40,990 tons), industrial waste (126,626 tons), and exempt waste (28,912 tons). Exempt waste was projected to increase at one percent per year. The generation rate in pounds per person per day for the reference year is 26.40. Total waste generation is projected to increase to 216,277 tons in 2023, the last year of the planning period.

D. PROJECTION FOR WASTE STREAM COMPOSITION

The District does not anticipate any major changes in the composition of the waste stream during the planning period. If any arises, the District will report them in the Annual Report. However, changes in economic conditions (thus the closing of industries) could greatly impact all projections.

E. WASTE REDUCTION AND RECYCLING STRATEGIES THROUGH THE PLANNING PERIOD

The District will continue to develop recycling and waste reduction strategies to meet the goals established in the 1995 State Plan.

In the reference year there are 26 drop-off recycling sites and two privately located sites in existence in Holmes County, however, the District's Recycling Center processing unit was closed in April 2001. It remains open as a drop off site for the public.

White goods had been collected at the Recycling Center previous to its closing. Beginning in May 2001 the collection site for white goods and all metals was changed to the Holmes County Landfill. This site is still active.

As explained in the District's 2003 ADR for 2002, with the closing of the Recycling Center's processing unit all loads of recycling materials were weighed on the scales at the Landfill and verified by non-employees of the Solid Waste District.

The District must continue to develop recycling and waste reduction strategies to meet the goals established in the 1995 *State Plan*. The new goals include:

Goal # 1 Ensure the availability of reduction and recycling opportunities/programs for residential/commercial waste.

Goal # 2 Reduce and/or recycle at least 25% of the residential/commercial waste generated and 50% of the industrial waste generated.

Goal # 3 Provide informational and technical assistance on source reduction.

Goal # 4 Provide informational and technical assistance on recycling, reuse and composting opportunities.

Goal # 5 Develop strategies managing scrap tires and household hazardous waste (HHW).

Goal # 6 Annual reporting of plan implementation.

Goal # 7 Prepare a market development strategy (optional).

1. Residential/Commercial Waste Reduction Strategies

The District's residential/commercial waste reduction strategies are presented in Table 5-5. Actual recycling quantities are represented in the reference year (2005), 2006 and

2007. The projected value for each residential/commercial recycling program throughout the rest of the planning period is calculated as a ratio based on the residential rate of population change from Table 5-1. Starting in 2008, the District projects that residential waste reduction will increase on average 0.65% per year throughout the planning period. In 2005, the District recycled 7,389 tons of residential/commercial waste. The District projects 11,184 tons will be recycled by 2023. The following programs will assist the District in reaching these goals:

Goal #1 – The District intends to comply with Goal #1 and ensure the availability of reduction and recycling opportunities for residential/commercial waste. The District will comply with Goal #1 with the following programs:

Residential Recycling Programs

Curbside Recycling

For several years the District attempted to establish a non-subscription curbside recycling program for the village of Millersburg. This was finally accomplished in July 2006. Millersburg contracted for curbside trash and recycling in 2006 with Browns Trash Removal. The contractor bills each homeowner for the trash and recycling services. The initial contract began in 2006 for three years ending in 2009. The Village renewed the contract in 2009 for three more years from 2009-2012.

This program has assisted in alleviating congestion at our Millersburg drop-off sites. It has been relatively successful for the past year-and-a half. The program, of course, accepts all metals, papers, cardboard, plastics and glass. This program has increased village recycling levels by 2% simply because of the ease with which residents can recycle at curbside versus transporting items to the drop-off sites. In Table 5-5, this strategy is presented under "Residential Recycling Programs" but indicates "0" in the reference year because it is was not yet established." The District will measure the success of this program by comparing results with drop-off statistics. It is anticipated that as residents become more used to this convenience of recycling that the levels will increase. The District provided the village with technical assistance to enhance the services. This program will continue for the Village of Millersburg as both residents and administrators are very pleased with its success. The District's very rural setting, however, does not lend itself easily to expanded curbside activity. Townships are very reluctant to try to garner support in broad geographical settings.

Drop-Off and MRF Programs

Refer to the description in Section 4. The District continues to operate a system of 26 voluntary drop-off recycling sites and two privately located sites throughout the county. These sites are available to the general public 24/7 and are the key to our successful program. District personnel regularly collect the recycling bins from the sites, and deliver them to the Recycling Center where they are sorted for further transport. The actual processing of recyclables at the Center terminated effective April 17, 2001, but the Center remained a drop-off site and sorting facility. A private recycling company transports the recyclables to their Cleveland MRF where the processing will take place. For all intents and purposes, the recycling program in the county has not been negatively affected by this change. In fact, it should be enhanced because a more routine schedule for bin collection can be established.

In 2009, the District eliminated the full time drop-offs in Charm, Glenmont and Lake Buckhorn because of lack of use and extreme contamination issues. This action has not affected the District's recycling access status as the District still shows 95% for the entire County.

Electronics Recycling

Beginning in 2004, the District initiated a full-time recycling program devoted to electronic items and cellular phones servicing all the residents of Holmes County. This program had its beginning in mid-2003 as part of the District's HHW collection drive in which over three tons of electronics were collected for recycling. The District is contracted with RET3 out of Cleveland. This organization refurbishes the components and provides them free of charge to people with handicaps, limitations, and special needs, and to institutions that serve these individuals. The program is open to residents, commercial users and the industrial sector. They may drop off their items at the District's Recycling Center on weekdays. We anticipate collecting approximately 21 ton of these items per year.

Because of the economic conditions within the District, the electronics collection program will switch to a fee for service system beginning in 2010. This system will allow the District to continue to operate the programs but the cost for the collection will be passed on to the user in a per unit fee. These fees can be per item, per pound or other fee mechanism.

Goal #2 – The District has achieved the objective to reduce and /or recycle at least 50% of the total waste generation. The District will continue to work towards achieving Objective #1 (reduce or recycle at least 25% of the residential/commercial waste generation).

Although the District shows in this Plan Update that the 25% waste reduction rate for the residential/commercial sector and 50% waste reduction rate for the industrial sector has been achieve by the first year of the planning period, the District has not chosen to declare this Plan Update in compliance with Goal #2 of the 1995 State Plan. This is based on the District's lack of confidence in the recycling data submitted in the reference year and subsequent years.

Goal #3 – The District is required to provide information and technical assistance on source reduction.

The District will continue to meet the goals for source reduction education and technical assistance with the direct assistance of our District personnel. The Program Manager is developing new programs to educate residential and commercial sectors about source reduction and recycling.

Residential Sector Education and Awareness Programs Source Reduction

- Brochure – The District will publish a Directory of Recycling Programs. This publication will include information about drop-offs and recycling opportunities. The District will revise the Directory annually. It will also include information on source reduction, recycling, composting and buying recycled products.

Approximately 1,000 copies of the brochure will be available by fall 2009. District personnel will distribute this publication at school and community presentations, the county fair, and community festivals.

Goal #4 – The District provides information and technical assistance on recycling, reuse and waste reduction opportunities. This program will continue as in the past and will provide for the following items:

Residential Sector Education and Awareness Programs: Recycling

- Brochure – see item above
- Recycling Advertising Campaign – The District will develop an advertising campaign to encourage recycling and waste reduction. The campaign will begin in the spring 2009. The Program Manager will use newspaper, billboards, TV, radio and other general media methods to achieve this goal.
- School Presentations and Programs – The District will add new emphasis to its outreach programming. The District has conducted school presentations and teacher workshops for many years in both public and private schools. In 2007, over 100 presentations were made to elementary and secondary classes. Although grant funding through ODNR was discontinued, the District continued to fund this activity because it saw it as essential to assist with recycling goals.
- Community Presentations – The District will continue to make presentations upon request from civic organizations to garden clubs, from church groups to community leadership fraternities. This strategy needs to be re-energized to gain more frequency.
- District Newsletter - The District will publish a tabloid newsletter and distribute to interested residents, political jurisdictions, and commercial/industrial facilities. In addition, the quarterly newsletter *Green Team* will continue to be published throughout the Planning Period. It originally was published in conjunction with the Holmes County Soil and Water District who changed their educational emphasis from children to adults, and no longer needed this publication. Now published solely by the District, this newsletter is designed to meet the curriculum/activity needs for the teacher, aide, administrator, home schooled.
- Other Publications – The District will annually publish, update and distribute the following publications. Distribution will take place during presentations or upon request by interested parties: "Recycling Means Business," Recycling Activity Books, "Earthworks" Recycling Booklets, Recycling Coloring Books, Composting Booklets, HHW Wheels, Litter Law Books, and numerous others furnished by ODNR.

The District Policy Committee is responsible for ensuring that the activities and requirements of the District presented in this Plan Update are met.

Goal #5 – The District must develop strategies to manage scrap tires and household hazardous wastes (HHW).

Scrap Tire Program

See Section 4 for past strategies. During the Planning Period scrap tire collections will continue as in the past: at special tire amnesty days, HHW collection times and daily at the Holmes County Fairgrounds.

Because of the economic conditions within the District, the scrap tire collection program will switch to a fee for service system beginning in 2010. This system will allow the District to continue to operate the programs but the cost for the collection will be passed on to the user in a per unit fee. These fees can be per item, per pound or other fee mechanism.

Household Hazardous Waste (HHW) Collection Program

See Section 4 and the following. The District has coordinated HHW collections days since 1997. Starting that year, the District has hosted one-day events triennially. The next HHW collection day is scheduled to be held in 2010. The District contracts with a private contractor for the event. Materials collected include (but not limited to) oil, all paints, antifreeze, flammables, pesticides, bases/acids, aerosols, all batteries, mercury, dioxins, household cleaners, propane cylinders, scrap tires, and electronics. The private contractor may assist the District with managing traffic, collecting survey data, and other District requirements. The District will develop and implement an advertising plan for the event. The District HHW program is held at a centralized location and is available to all residence of the county. This program will continue in the new Planning Period. As in the past and continuing through 2023, the District will support HHW collections via mass media advertising. With continuing rising costs associated with HHW activities, the advertising and promotion of this activity is very minimal.

Because of the economic conditions within the District, the HHW collection program will switch to a fee for service system beginning in 2010. This system will allow the District to continue to operate the programs but the cost for the collection will be passed on to the user in a per unit fee. These fees can be per item, per pound or other fee mechanism.

Appliance Recycling Program

See Section 4.

The District has conducted a white goods collection program since 1992. The District will continue to contract with a private recycler to properly recycle appliances. In Holmes County, appliances are collected in two methods: (1) at the Landfill where residents may drop them off free of charge six days a week all year; (2) at special community recycling events held at the villages of Glenmont and Millersburg and Ripley Township. These have been very successful and will continue throughout the Planning Period.

Because of the economic conditions within the District, the appliance collection program will switch to a fee for service system beginning in 2010. This system will allow the District to continue to operate the programs but the cost for the collection will be passed on to the user in a per unit fee. These fees can be per item, per pound or other fee mechanism.

Goal #7 – The District may develop strategies to promote markets for recyclables.

Waste Streams Restricted from Landfill and Incinerator Disposal

The District has established strategies to manage the materials that are not accepted in landfills. The scrap tire program along with tire retailer's acceptance of waste tires when

new tires are purchased helps to ensure tires are properly managed. The District has not has any open dumps for tires since 1997. This is due to a pro-active approach to educate the citizens that there are alternatives for them to use.

Lead-Acid Battery Program

See Section 4.

The lead-acid battery collections throughout the year and at HHW collection events will remain the same throughout the new planning period.

Because of the economic conditions within the District, the lead acid battery collection program will switch to a fee for service system beginning in 2010. This system will allow the District to continue to operate the programs but the cost for the collection will be passed on to the user in a per unit fee. These fees can be per item, per pound or other fee mechanism.

Yard Waste Program

See Section 4.

The District currently and in the new planning period will continue to promote yard waste programs during public presentations, mailings to the general public about recycling activities and composting possibilities. The District will promote yard waste alternatives through its weekly "question/answer" column in local newspapers.

2. Industrial Waste Reduction Strategies

Goal #2 – Districts must include strategies designed to reduce/recycle at least 50 percent of the industrial waste generated. The District already meets the goal to reduce/recycle at least 50 percent of the industrial solid waste generation through waste reduction and recycling programs implemented by industry.

<u>2005 Industrial Recycling Programs</u>

- Total adjusted industrial waste generation: 126,626 tons (Table 4-8).
- Total industrial waste recycled: 123,424 tons (Table 4-6)
- Percentage of waste reduced/recycled: 98 percent

The District projects in Table 5-6 that the amount of industrial waste recycled will increase in the same proportion as the average annual percent change in employment for the manufacturing industries of 0.44%. As population increases, the District anticipates industrial employment will also increase. However, the amount of industrial waste recycling will correlate to the economic condition of area industries.

The District believes the response to the industrial survey will continue to improve. The District will continue to survey its industries triennially and will pursue 100% participation. In 2005, the District's industrial facilities recycled 123,424 tons. By the end of 2023, the District's industrial facilities are projected to recycle 136,208 tons of solid waste materials.

Goal #3 – The District must design strategies to provide informational and technical assistance on source reduction to the industrial sector.

Commercial/Industrial Sector Technical Assistance and Education Programs: Source Reduction

- Brochures – The District will develop and publish a brochure focused on source reduction and recycling for industrial facilities as well as to commercial/institutional generators. The brochure will feature information about recycling opportunities in Holmes County. It will also include information about local recycling facilities, brokers, haulers, and buying recycled products. This publication will be distributed annually by mass mailing as well as upon request.

  Some of the brochures target specific waste streams such as cardboard and fibers, metals and plastics. Interaction in person and by telephone will dictate their personal needs.
- Waste Assessments – In the past, the District conducted waste assessments for both commercial and industrial facilities. This activity will continue throughout the Planning Period. The District will provide an opportunity for survey respondents to express an interest in receiving a waste assessment on their survey document. As part of this assessment, the District will provide information and assistance regarding source reduction and recycling issues to commercial, institutional and industrial sectors.

Goal #4 – The District must provide informational and technical assistance on recycling, reuse, and source reduction for the industrial sector.

Commercial/Industrial Sector Technical Assistance and Education Programs: Recycling

- Brochures – See brochures above under "source reduction."
- Waste Assessments – See Waste Assessments above under "source reduction."

Other Strategies

- Health Department – The District will continue to cooperate and assist the Holmes County Health Department with the enforcement of solid waste regulations if funding is available. Currently, funding issues will not allow the District to support the Health Department financially. This will include inspection of the landfill, any illegal dumps, and other health-related solid waste issues.
- Legal – The District may solicit legal advice for important solid waste management issues from the County's prosecutor's office as well as outside counsel. These individuals will assist with the negotiation of contracts, enforcement issues, flow control, and other legal issues impacting the District.
- General Plan Implementation – The District will anticipate time and funds for the development of new programs as the need arises. The outreach programming for the District was supported via ODNR grants through 2006. The grant program was discontinued. The District has a high priority for educational outreach and technical assistance activities. Thus, these programs are now supported by the District as part of its commitment to the constituents of Holmes County.

- An effort will be extended to include telephone surveying and relationship building among the District's commercial, industrial and institutional businesses. This will include face-to-face visits and direct communication via letter, email and telephone.
- The District will create a recognition program by 2010 for commercial, industrial, and institutional businesses. The program will be designed to recognize enterprises that have innovative recycling programs including but not limited to best programs, most innovative, and highest achievers.

Table V-1
District Population Projections

Year	County Population Holmes County	Adjustments to Population		Total District Population
		Baltic	Fairfield	
2005	40,980	-107	-83	40,790
2006	41,547	-107	-108	41,332
2007	41,850	-108	-111	41,631
2008	42,380	-109	-116	42,155
2009	42,910	-110	-120	42,680
2010	43,440	-111	-125	43,204
2011	43,722	-112	-130	43,480
2012	44,004	-113	-135	43,756
2013	44,286	-114	-140	44,032
2014	44,568	-115	-146	44,307
2015	44,850	-116	-151	44,583
2016	45,097	-117	-155	44,825
2017	45,344	-118	-161	45,065
2018	45,591	-119	-166	45,306
2019	45,838	-120	-171	45,547
2020	46,085	-120	-175	45,790
2021	46,332	-122	-176	46,034
2022	46,579	-122	-176	46,281
2023	46,826	-123	-177	46,526

Source:
The 2005 population values are taken from Table IV-1
Source for Gross Population: Ohio Department of Development projected growth for Holmes County of 530 per year from 2006-2010; 282 per year from 2011-2015; 247 per year from 2016-2020.

Baltic/ Loudonville Adjustments: Based on assumption by the U.S. Census Office for the years 2006-2015. The population of Baltic Village is expected to increase by .52 percent per year. The population of Loudonville Village is expected to increase by 3.94 percent per year.

Sample Calculation for 2008: 42,380 – (109 + 116) = 42,155

Table V-2
District Residential/Commercial Waste Generation (TPY)

Year	District Population	Per Capita Generation Rate	Total Residential/Commercial Waste Generation (TPY)
2005	40,790	5.51	40,990
2006	41,332	4.73	35,679
2007	41,631	5.15	39,128
2008	42,155	4.88	37,543
2009	42,680	4.90	38,201
2010	43,204	4.93	38,863
2011	43,480	4.95	39,307
2012	43,756	4.98	39,754
2013	44,032	5.00	40,205
2014	44,307	5.03	40,659
2015	44,583	5.05	41,116
2016	44,825	5.08	41,546
2017	45,065	5.10	41,978
2018	45,306	5.13	42,413
2019	45,547	5.16	42,852
2020	45,790	5.18	43,296
2021	46,034	5.21	43,744
2022	46,281	5.23	44,199
2023	46,526	5.26	44,655

Source:
District Population-Table V-1
Per Capita Generation Rate: calculated using incremental increases recommended by Ohio EPA in a document titled "Estimating Per Capita Residential/Commercial Waste Generation"

Sample Calculation:

District population x per capita Generation Rate (lb/person/day) x 365 days/year x 1 ton/2,000 lbs = Total Residential/Commercial Generation (tons)

2005 Total Residential/Commercial Waste Generation = 40,790 x 5.51 x 365 x 1/2,000 = 40,990

Table V-3
Projected Industrial Waste Generation

SIC Category	Year																		
	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
20	55,846	56,092	56,339	56,586	56,835	57,085	57,337	57,589	57,842	58,097	58,352	58,609	58,867	59,126	59,386	59,648	59,910	60,174	60,438
22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24	20,744	20,835	20,927	21,019	21,112	21,205	21,298	21,392	21,486	21,580	21,675	21,771	21,866	21,963	22,059	22,156	22,254	22,352	22,450
25	762	765	769	772	776	779	782	786	789	793	796	800	803	807	810	814	818	821	825
26	6,542	6,570	6,599	6,628	6,657	6,687	6,716	6,746	6,775	6,805	6,835	6,865	6,895	6,926	6,956	6,987	7,018	7,048	7,079
27	897	901	905	909	913	917	921	925	929	933	937	941	945	950	954	958	962	966	971
28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30	14,641	14,705	14,770	14,835	14,900	14,966	15,032	15,098	15,164	15,231	15,298	15,365	15,433	15,501	15,569	15,638	15,706	15,775	15,845
31	432	434	435	437	439	441	443	445	447	449	451	453	455	457	459	461	463	465	467
32	2,563	2,574	2,585	2,597	2,608	2,620	2,631	2,643	2,654	2,666	2,678	2,689	2,701	2,713	2,725	2,737	2,749	2,761	2,773
33	94	95	95	96	96	97	97	97	98	98	99	99	100	100	100	101	101	102	102
34	10,002	10,046	10,090	10,134	10,179	10,224	10,269	10,314	10,359	10,405	10,451	10,497	10,543	10,589	10,636	10,683	10,730	10,777	10,824
35	5,385	5,408	5,432	5,456	5,480	5,504	5,528	5,553	5,577	5,602	5,626	5,651	5,676	5,701	5,726	5,751	5,776	5,802	5,827
36	6,273	6,301	6,328	6,356	6,384	6,412	6,440	6,469	6,497	6,526	6,555	6,583	6,612	6,641	6,671	6,700	6,730	6,759	6,789
37	1,559	1,566	1,572	1,579	1,586	1,593	1,600	1,607	1,614	1,621	1,629	1,636	1,643	1,650	1,657	1,665	1,672	1,679	1,687
38	202	203	204	205	206	207	208	209	210	210	211	212	213	214	215	216	217	218	219
39	685	688	691	695	698	701	704	707	710	713	716	719	723	726	729	732	735	739	742
N/A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	**126,626**	**127,183**	**127,743**	**128,305**	**128,869**	**129,436**	**130,006**	**130,578**	**131,152**	**131,730**	**132,309**	**132,891**	**133,476**	**134,063**	**134,653**	**135,246**	**135,841**	**136,438**	**137,039**

Projected Employment Growth For Manufacturing Industries		
NAICS Industry Category	**Percent Change 2004-2014**	**Annual Percent Change ***
Manufacturing	4.40%	0.44%
Average	**4.40%**	**0.44%**

Source:
Industrial Generation by SIC Code for 2005 from Table IV-2 adjusted to correspond to total industrial waste on Table IV-8
Change in industrial generation is calcualted based on the change in employment for the manufactiring industries.
The Ohio Department of Job and Family Services (ODJFS), East Central Ohio Development Region 10, Industry Employment Projections Report, 2004-2014

Sample Calculation:

(Waste generated in previous year) + (waste generated in previous year x assumed growth rate) = waste generated in estimated year

2008 SIC Code 20

(55,846) + (55,846 x 0.44) = 56,092 2005 SIC Code 20

Table V-3A
Standard Industrial Classifications

SIC	Description
20	Food and Kindred Products
22	Textile Mill Products
23	Apparel and Other Finished Products Made from Fabric
24	Lumber and Wood Products, Except Furniture
25	Furniture and Fixtures
26	Paper and Allied Industries
27	Printing, Publishing, and Allied Products
28	Chemicals and Allied Products
29	Petroleum Refining and Related Industries
30	Rubber and Miscellaneous Plastic Products
31	Leather and Leather Products
32	Stone, Clay, Glass and Concrete Products
33	Primary Metal Industries
34	Fabricated Metal Products, Except Machinery and Transportation
35	Industrial and Commercial Machinery and Computer Equipment
36	Electronic and Other Electrical Equipment and Components
37	Transportation Equipment
38	Measuring, Analyzing and Controlling Instruments
39	Miscellaneous Manufacturing Industries
Average Change in Employment	

Table V-4

Total Waste Generation for the District During the Planning Period (in TPY)

Year	Residential/ Commercial	Industrial	Exempt	Total Waste	Generation Rate (lbs/person/day)
2005	40,990	126,626	28,912	196,528	26.40
2006	35,679	127,183	29,201	192,063	25.46
2007	39,128	127,743	29,493	196,364	26.38
2008	37,543	128,305	29,788	195,636	25.94
2009	38,201	128,869	30,086	197,156	25.95
2010	38,863	129,436	30,387	198,686	25.83
2011	39,307	130,006	30,691	200,004	25.68
2012	39,754	130,578	30,998	201,330	25.53
2013	40,205	131,152	31,308	202,665	25.54
2014	40,659	131,730	31,621	204,009	25.55
2015	41,116	132,309	31,937	205,362	25.56
2016	41,546	132,891	32,256	206,694	25.56
2017	41,978	133,476	32,579	208,032	25.57
2018	42,413	134,063	32,905	209,381	25.59
2019	42,852	134,653	33,234	210,739	25.62
2020	43,296	135,246	33,566	212,107	25.65
2021	43,744	135,841	33,902	213,487	25.68
2022	44,199	136,438	34,241	214,878	25.71
2023	44,655	137,039	34,583	216,277	25.74

Source:
Residential/Commercial Table V-2
Industrial Table V-3
Exempt Waste is projected to increase by 1.0% annually

Sample Calculation:

Exempt waste projection based on 1.0% increase

(waste generated in previous year) + (waste generated in previous year x assumed 1.0% increase) = waste generated in estimated year
(28,912) + (28,912 x .01) = 29,201

Total Waste = Residential/Commercial + Industrial + Exempt
196,528 = 40,990 + 126,626 + 28,912

$$\text{Generation Rate (lb/person/day)} = \frac{\text{Total Waste Generated (tons) x 2,000 pounds /ton}}{\text{Population x 365 days/year}}$$

$$26.40 = \frac{196{,}528 \times 2{,}000}{40{,}790 \times 365}$$

Table V-5
Residential/Commercial Waste Reduction Strategies

Strategy	Type of Material Reduced and/or Recycled	Tons of Waste Reduction																		
		2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Residential Source Reduction Strategies																				
Recycling Brochure	n/a	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Residential Recycling Programs																				
Curbside Recycling Programs	Al, St, Pl, Gl, Pap, Cb, Electronics	0	607	714	723	732	741	746	750	755	760	764	769	773	777	781	785	789	794	798
Drop-Off and MRF Programs	Al, St, Pl, Gl, Pap, Cb, Metals, Batt.	6,885	7,641	8,109	8,211	8,314	8,416	8,469	8,523	8,577	8,630	8,684	8,731	8,778	8,825	8,872	8,919	8,967	9,015	9,063
Office Paper recycling Program County Government Offices	OP	241	314	424	430	435	440	443	446	449	452	454	457	459	462	464	467	469	472	474
Scrap Tire Program	Scrap Tires	0	0	412	418	423	428	431	433	436	439	442	444	446	449	451	454	456	458	461
Household Hazardous Waste Collection Program	Oil, Paint, Antifreeze, Flammables, Pesticides, Bases/Acids, Aerosols, Batteries, Mercury, Dioxins, HH Cleaners, Propane Cylinders, Gas, Tires, Electronics	0	0	0	0	6	0	0	10	0	0	14	0	0	14	0	0	14	0	0
Appliance Recycling Program	Appliances and White Goods	238	242	242	245	248	251	253	255	256	258	259	261	262	264	265	266	268	269	271
Electronics Recycling Program	Electronics	25	3	103	104	106	107	108	108	109	110	110	111	112	112	113	113	114	115	115
Lead-Acid Battery and Used Oil Program	Batteries	0	5	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Residential - Commercial Education and Awareness Programs																				
Recycling Brochure	n/a	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Advertising Campaigns	n/a	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
School Presentations	n/a	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Community Presentations	n/a	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
District Tabloid	n/a	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Green Team Newsletter	n/a	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Yard Waste Mangement	n/a	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Grand Totals	**7,389**	**8,812**	**10,007**	**10,133**	**10,265**	**10,385**	**10,451**	**10,528**	**10,584**	**10,650**	**10,730**	**10,775**	**10,832**	**10,904**	**10,948**	**11,007**	**11,079**	**11,125**	**11,184**

2005 Recycling Data is from table IV-5
2006 and 2007 actual Recycling data is from the 2006 and 2007 Annual District Reports
Projected value for each residential/commercial recycling program is calculated as a ratio based on the residential population change.

AC=Aluminum Containers; GL=Glass Containers; PL= Plastic Containers; ONP=Old Newspaper; OCC=Corrugated Cardboard; SC=Steel Containers; PBd=Paperboard; LAB=Lead Acid Battery; Mag=Magazines;
OffP=Office Paper; MxP=Mixed Paper; ST=Scrap Tires; App=Appliances; Oth=Nicad Batteries, UO=Used Oil, HHB=Household Batteries, YW-Yard Waste, EW-Electronic Waste, Oth-Other, FW=Food Waste, n/a-not applicable

Sample Calculation

$$\text{2007 Curbside Program} = \frac{\text{2008 Population}}{\text{2007 Population}} \times \text{2007 Collection Program}$$

$$723 = \frac{42{,}155}{41{,}631} \times 714$$

Table V-6
Industrial Waste Reduction Strategies

Strategy	Type of Material Reduced and/or Recycled	Tons of Source Reduction/Recycling																		
		2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Industrial Sector Technical Assistance and Education Programs: Source Reduction																				
Brochure	n/a	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	3
Industrial Sector Technical Assistance and Education Programs: Recycling																				
Industrial Recycling Programs	Al, St, Pl, Gl, Pap, Cb, Wd, Fm, Om	123,424	123,423	126,965	127,524	128,085	128,648	129,215	129,783	130,354	130,928	131,504	132,082	132,664	133,247	133,834	134,422	135,014	135,608	136,205
Brochure		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Waste Assessments		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Waste Reduction Strategies																				
Industrial Incineration-Waste Reduction		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Grand Totals	**123,424**	**123,423**	**126,965**	**127,524**	**128,085**	**128,648**	**129,215**	**129,783**	**130,354**	**130,928**	**131,504**	**132,082**	**132,664**	**133,247**	**133,834**	**134,422**	**135,015**	**135,610**	**136,208**

Note:
Industrial recycling projections are based on the average annual percent change in employment of 0.44%. See table V-3.

Sample Calculation:
(waste recycled in previous year) x percent = recycling in estimated year
(2007) 126,695.14 x 0.44% = 127,253.79